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PATENT SPECIFICATION

NO DRAWINGS

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COMPLETE SPECIFICATION

Dieting and Sandwich Biscuits

5 We SANDOZ PRODUCTS LIMITED, of Calverley Lane, Horsforth, Leeds, a British Company, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 The present invention relates to an edible composition containing a substance capable of swelling on ingestion in the form of a sandwich biscuit intended to replace wholly or partly the ordinary food consumed by humans desirous of losing weight.

15 The use of cellulose derivatives as swelling agents in reducing aid biscuits has previously been proposed. These cellulose derivatives, e.g. sodium carboxy-methyl cellulose and methyl cellulose, have the disadvantage of causing an unpleasant sensation in the mouth.

20 It is a purpose of the present invention to reduce or overcome the above disadvantage, while at the same time providing cream sandwich biscuits containing vitamins, minerals, proteins and, optionally, any other solid substances necessary to sustain life.

25 These materials should be present at a weight reducing level together with a swelling agent which, on ingestion, gives a feeling of satiety, so that all or part of the ordinary food intake of humans desirous of losing weight may be replaced by the biscuits. It should be noted that the word "sandwich" as used herein designates cream biscuits having any number of dry layers supporting a cream.

30 We have now found that the above purpose of the present invention may be achieved by providing a cream sandwich biscuit of conventional biscuit shell (the term "shell" as used herein means cooked portion of the sandwich biscuit, be it sweet or savoury) and a filling of a cream base through which there is dispersed guar gum, vitamins, minerals and

proteins in the required amount. This filling is, of course, not subjected to high temperatures at which the heat sensitive ingredients present in it would be adversely affected to an appreciable extent. 45

The present invention therefore provides a cream sandwich biscuit consisting of a conventional baked shell and a cream filling, said cream being a dispersion in a cream base of guar gum, minerals, vitamins and proteins. 50

It is within the scope of the present invention to provide in the biscuits, be it shell or cream, any one or more other materials than those specified above, which materials are desirable foodstuffs or other edible substances, e.g. sugar, starch or flavouring. 55

The cream base, i.e. matrix, of the cream sandwich filling is preferably a fat, e.g. coconut oil, hydrogenated coconut oil, hardened palm kernel oil, or a blend of these with or without other edible vegetable oils (the final blend is chosen in such a way as to produce the required melting point of the cream). 65

Obviously the amount of guar gum to be incorporated in the cream must be adjusted to avoid an unpleasant sensation by too much gum but must be enough to give a reasonable feeling of satiety and hence will depend on the number of biscuits intended to make up one day's diet; assuming this to be 12 biscuits, the amount of gum may suitably be from 0.5 g to 8 g in these 12 biscuits. 70

It will be appreciated that the amounts of all the other constituents in the filling and the calorific value of the shell will depend upon the number of biscuits which it is intended should replace one meal of a human being on a reducing diet. For example, when a total of four biscuits is intended to replace one meal, a suitable calorific value for the four biscuits would be 300 calories. The amounts of vitamins, minerals, proteins and 75 80

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any other foodstuffs present must, furthermore, be such as to give a balanced diet and these amounts are well known.

- 5 In order to vary the diet, various flavourings of natural or synthetic origin may be incorporated in the cream, e.g. natural or artificial cheese, fruit flavouring (specific examples are lemon and orange), cocoa powder or cocoa butter chocolate.

- 10 The following examples illustrate the invention without, however, limiting it. The guar gum referred to in said Examples has a gum content of 77 to 85% by weight.

EXAMPLE 1.

- 15 Two cracker biscuits of conventional manufacture are used as shell for a cream sandwich biscuit of the savoury kind. Each of the two cracker biscuits has a calorific value of about 24 calories. The following ingredients:—

20	Soya Flour	12.0	g.
	Calcium Caseinate	3.0	g.
	Calcium Phosphate dibasic	3.30	g.
	Magnesium Phosphate dibasic	1.70	g.
25	Guar Gum	1.0	g.
	Copper & Iron Salts	0.0520	g.
	Vitamin A	5000	i.u.
	Vitamin B ₁	1.50	mg.
	Vitamin B ₂	1.50	mg.
30	Nicotinamide	14.0	mg.
	Vitamin B ₆	1.80	mg.
	Vitamin C	65.0	mg.
	Vitamin D	600	i.u.
	Potassium Iodide	0.00020	g.
35	Natural Cheese	7.70	g.
	Artificial Cheese		

(negligible calorific value) 1.30 g.

- are dispersed in 25.0 g. of deodorized coconut oil by means of a grid-type mixer until a homogeneous cream results. The appropriate weight of this cream is placed in known manner between the two savoury cracker biscuits to form a sandwich biscuit. The cream is applied by means of a cream stencilling machine of known design in a conventional manner and the entire cream sandwich is made in known manner.

The calorific value of the cream filling indicated in this example is about 27 calories.

- 50 **EXAMPLE 2.**

A conventional sweet wafer biscuit is made, comprising three tiers of cream filling with four plain wafers. The four plain wafers have a combined calorific value of about 10 calories.

- 55 This time the cream is made by dispersing the following ingredients:—

Soya Flour	19.0	g.	
Calcium Caseinate	11.0	g.	
Calcium Phosphate dibasic	3.30	g.	
Magnesium Phosphate dibasic	1.70	g.	60
Guar Gum	1.0	g.	
Copper & Iron Salts	0.0520	g.	
Vitamin A	5000	i.u.	
Vitamin B ₁	1.50	mg.	65
Vitamin B ₂	1.50	mg.	
Nicotinamide	14.0	mg.	
Vitamin B ₆	1.80	mg.	
Vitamin C	65.0	mg.	
Vitamin D	600	i.u.	70
Potassium Iodide	0.00020	g.	
Sugar Powder	45.0	g.	

Artificial Lemon Flavouring (negligible calorific value)

2.0 g. 75

in 52.0 g. of deodorized coconut oil by means of a grid-type mixer until a homogeneous cream results. Using the conventional procedure of cream spreading, compounding and cutting the creamed wafer biscuits, a wafer biscuit with three tiers of cream filling and containing the appropriate weight of cream is produced. The calorific value of the cream amounts to about 65 calories.

EXAMPLE 3.

A conventional sweet wafer biscuit is made comprising 5 tiers cream filling with 6 plain wafers. The 6 plain wafers have a combined calorific value of about 10 calories. The cream is made by dispersing the following ingredients:—

Soya Flour	19.0	g.	
Calcium Caseinate	11.0	g.	
Calcium Phosphate dibasic	3.30	g.	
Magnesium Phosphate dibasic	1.70	g.	95
Guar Gum	1.0	g.	
Copper & Iron Salts	0.0520	g.	
Vitamin A	5000	i.u.	
Vitamin B ₁	1.50	mg.	100
Vitamin B ₂	1.50	mg.	
Nicotinamide	14.0	mg.	
Vitamin B ₆	1.80	mg.	
Vitamin C	65.0	mg.	
Vitamin D	600	i.u.	105
Potassium Iodide	0.00020	g.	
Sugar Powder	29.0	g.	
Cocoa Butter Chocolate	9.0	g.	
Cocoa Powder	3.0	g.	

in 57.0 g. deodorized coconut oil by means of a grid-type mixer until a homogeneous cream results. Using the conventional procedure of cream spreading, compounding and cutting

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the creamed wafer biscuit, a wafer biscuit with five tiers of cream filling and containing the appropriate weight of cream is produced. The calorific value of the cream amounts to about 65 calories.

- 5 It will be seen from the above Examples that the total calorific value of four biscuits of Example 1, 2 or 3 is about 300 calories. It will therefore be appreciated that a 300 calories meal could consist of two biscuits of Example 1 and two biscuits of Example 2 or 3, so that a two course meal (savoury course and sweet course) is simulated.

WHAT WE CLAIM IS:—

- 15 1. A cream sandwich biscuit consisting of a conventional baked shell and a cream, said cream being a dispersion in a cream base of

guar gum, minerals, vitamins and proteins.

2. A cream sandwich biscuit according to Claim 1, in which the cream base is deodorized coconut oil. 20

3. A cream sandwich biscuit according to Claim 1 or 2, in which there is present, either in the cream or in the shell, one or more edible substances in addition to those specified. 25

4. A cream sandwich biscuit substantially as hereinbefore described with reference to Example 1, 2 or 3.

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